

Inspection Report For Well: UT20736 - 04546

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah

Date: 12/10/2013

Others: Ajayi, Christopher

Time: 10:53 am

OPERATOR (only if different):

REPRESENTATIVE(S): Chad Steiness

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name: Ute Tribal 16-06

Well Type: Enhanced Recovery (2R)

Operating Status: AC (ACTIVE) as of 12/31/2002

Oil Field: Antelope Creek (Duchesne)

Location: SENW S16 T5S R3W

Indian Country: X, Uintah and Ouray

Last Inspection: 8/28/2012

Allowable Inj Pressure: 2030 /

Last MIT: Pass 4/27/2009

Annulus Pressure From Last MIT: 1100

BLACK = POSSIBLE VIOLATION

GREY = DATA MISSING

INSPECTION TYPE:

(Select One)

☐ Construction / Workover

☐ Plugging

☐ Post-Closure

☐ Response to Complaint

☒ Routine

☐ Witness MIT

☐ Other

ICIS Entered

Date 12/20/13

Initials DS

OBSERVED VALUES:

Tubing Gauge:

☒ Yes

☐ No

Pressure: U: 1948 / L: psig

Gauge Range: 5000 psig

Gauge Owner:

☐ EPA

☒ Operator

Annulus Gauge:

☒ Yes

☐ No

Pressure: 0 psig

Gauge Range: 0-2000 psig

Gauge Owner:

☐ EPA

☒ Operator

Bradenhead Gauge:

☐ Yes

☐ No

Pressure: psig

Gauge Range: psig

Gauge Owner:

☐ EPA

☐ Operator

Pump Gauge:

☐ Yes

☐ No

Pressure: psig

Gauge Range: psig

Gauge Owner:

☐ EPA

☐ Operator

Operating Status:

(Select One)

☒ Active

☐ Being Reworked

☐ Not Injecting

☐ Production

☐ Plugged and Abandoned

☐ Under Construction

U2 Entered See page 2 for photos, comments, and site conditions.

Date 12/17/13

Initial JH

	GREEN	BLUE	CBI
IAB		1	

Inspection Report For Well: UT20736 - 04546 (PAGE 2)

PHOTOGRAPHS:

☐

Yes

☒

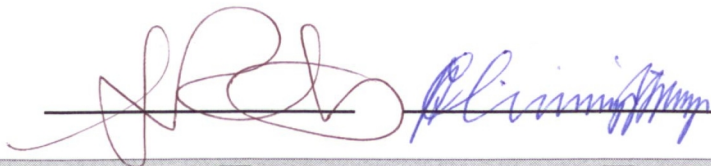
No

List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s):

☐

Data Entry

☐

Compliance Staff

☐

Hard Copy Filing

NOTICE OF INSPECTION



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/10/13

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Hour: 8:00a

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts

Inspector's Name & Title (Print)

[Signature]
Inspector's Signature



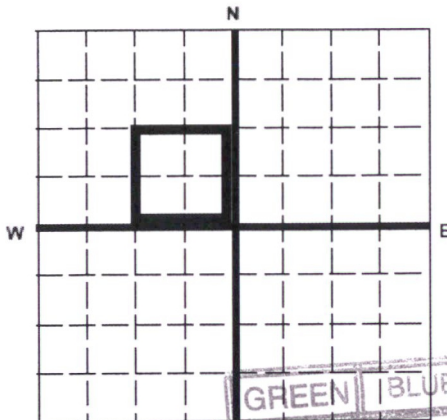
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on
Section Plat - 640 Acres



State
Utah

County
Duchesne

Permit Number
UT2736-04546

Surface Location Description

1/4 of 1/4 of SE 1/4 of NW 1/4 of Section 16 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location 1980 ft. from (N/S) N Line of quarter section
and 1980 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY

☐ Brine Disposal
☒ Enhanced Recovery
☐ Hydrocarbon Storage

TYPE OF PERMIT

☐ Individual
☒ Area

Number of Wells 111

U2 Entered

Date 4/3/17

Initial DB

Lease Name Ute Indian Tribe

Well Number UTE TRIBAL 16-06

INJECTION PRESSURE

TOTAL VOLUME INJECTED

TUBING - CASING ANNULUS PRESSURE
(OPTIONAL MONITORING)

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1869	1904	615		0	0
February	16	1934	1966	671		0	0
March	16	1950	1974	692		0	0
April	16	1957	1981	665		0	0
May	16	1971	1985	720		0	0
June	16	1956	2003	659		0	0
July	16	1947	1960	666		0	0
August	16	1878	1970	696		0	0
September	16	1919	1946	542		0	0
October	16	1940	1954	723		0	0
November	16	1844	1889	456		0	0
December	16	1905	1923	696		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Chad Stevenson, Water Facilities Supervisor

Signature

Date Signed

03/21/2017

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**Sales Rep: **James Patry**Well Name: **UTE TRIBAL 16-06, DUCHESNE**Lab Tech: **Kaitlyn Natelli**Sample Point: **Well Head**Sample Date: **1/6/2017**Scaling potential predicted using ScaleSoftPitzer from
Brine Chemistry Consortium (Rice University)Sample ID: **WA-345293**

Sample Specifics		Analysis @ Properties in Sample Specifics			
		Cations	mg/L	Anions	mg/L
Test Date:	1/25/2017	Sodium (Na):	511.39	Chloride (Cl):	500.00
System Temperature 1 (°F):	300	Potassium (K):	4.25	Sulfate (SO4):	80.00
System Pressure 1 (psig):	2000	Magnesium (Mg):	24.55	Bicarbonate (HCO3):	722.00
System Temperature 2 (°F):	130	Calcium (Ca):	44.27	Carbonate (CO3):	
System Pressure 2 (psig):	50	Strontium (Sr):	1.15	Hydroxide (HO):	
Calculated Density (g/ml):	0.9986	Barium (Ba):	2.34	Acetic Acid (CH3COO)	
pH:	6.80	Iron (Fe):	22.84	Propionic Acid (C2H5COO)	
Calculated TDS (mg/L):	1926.06	Zinc (Zn):	4.28	Butanoic Acid (C3H7COO)	
CO2 in Gas (%):		Lead (Pb):	0.00	Isobutyric Acid ((CH3)2CHCOO)	
Dissolved CO2 (mg/L):	20.00	Ammonia (NH3):		Fluoride (F):	
H2S in Gas (%):		Manganese (Mn):	0.28	Bromine (Br):	
H2S in Water (mg/L):	0.00	Aluminum (Al):	0.08	Silica (SiO2):	8.71
Tot. Suspended Solids (mg/L):		Lithium (Li):	2.69	Calcium Carbonate (CaCO3):	
Corrosivity (Langlier Sat. Indx)	0.00	Boron (B):	0.83	Phosphates (PO4):	2.79
Alkalinity:		Silicon (Si):	4.07	Oxygen (O2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	1.07	1.27	0.00	0.00	1.68	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149.00	267.00	0.01	0.73	0.98	1.24	0.00	0.00	1.80	16.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168.00	483.00	0.14	7.35	0.91	1.22	0.00	0.00	1.96	16.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	700.00	0.29	13.61	0.86	1.20	0.00	0.00	2.11	16.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	917.00	0.44	19.27	0.83	1.18	0.00	0.00	2.26	16.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
224.00	1133.00	0.60	24.15	0.81	1.18	0.00	0.00	2.41	16.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
243.00	1350.00	0.77	28.17	0.81	1.17	0.00	0.00	2.56	16.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262.00	1567.00	0.94	31.32	0.82	1.18	0.00	0.00	2.70	16.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
281.00	1783.00	1.12	33.67	0.84	1.19	0.00	0.00	2.84	16.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2000.00	1.31	35.36	0.86	1.20	0.00	0.00	2.98	16.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

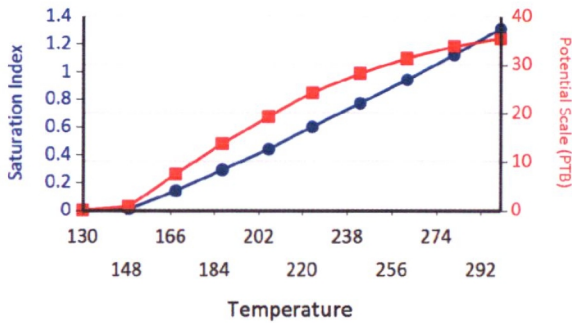
Water Analysis Report

Temp (°F)	PSI	Hemihydrate CaSO ₄ ~0.5H ₂ O		Anhydrate CaSO ₄		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	2.31	0.00	0.00	0.00	0.00	0.00	0.00	2.51	11.50
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	2.54	0.00	0.00	0.00	0.00	0.00	0.00	3.12	13.07
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	2.69	0.00	0.00	0.00	0.00	0.00	0.00	3.96	14.70
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	2.77	0.00	0.00	0.00	0.00	0.00	0.00	4.83	15.86
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	2.81	0.00	0.00	0.00	0.00	0.00	0.00	5.71	16.64
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	2.84	0.00	0.00	0.02	0.29	0.00	0.00	6.61	17.13
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06	2.85	0.00	0.00	1.10	9.81	0.00	0.00	7.51	17.43
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.86	0.00	0.00	2.18	16.39	0.14	1.30	8.42	17.59
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	2.87	0.00	0.00	3.24	20.11	0.80	5.79	9.33	17.68
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	2.87	0.00	0.00	4.28	21.74	1.46	8.60	10.24	17.72

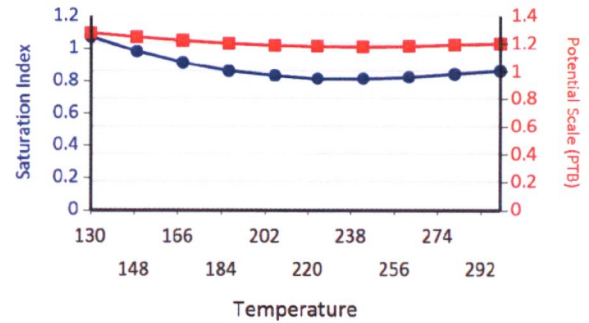
These scales have positive scaling potential under initial temperature and pressure: Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

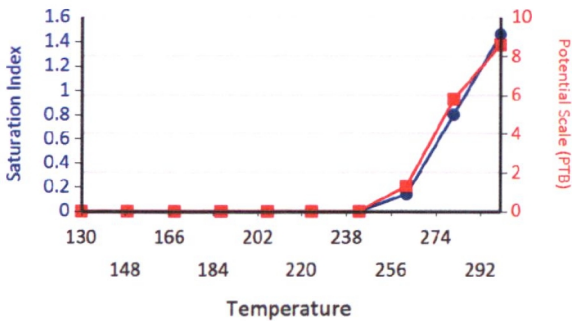
Calcium Carbonate



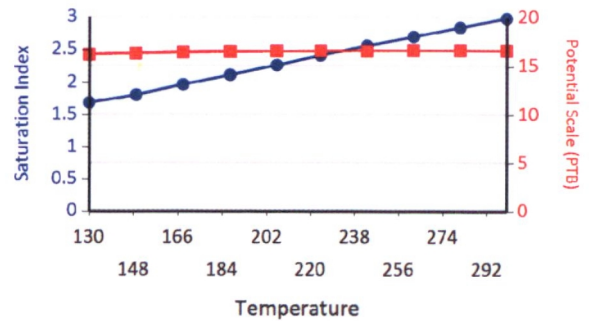
Barium Sulfate



Ca Mg Silicate

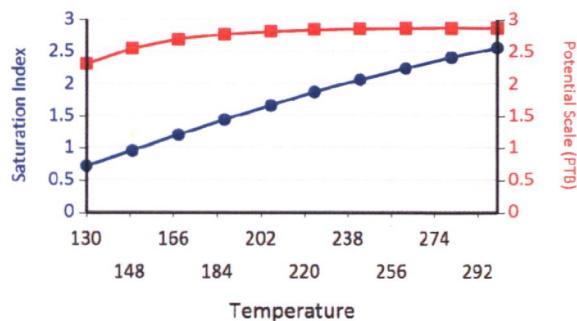


Iron Carbonate

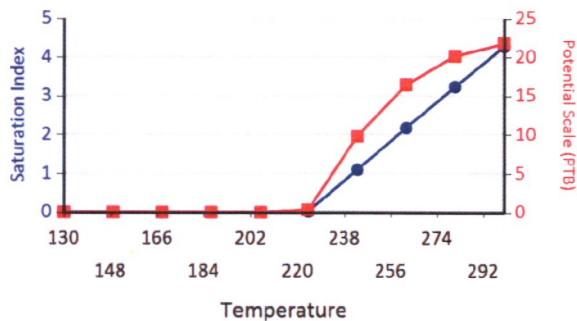


Water Analysis Report

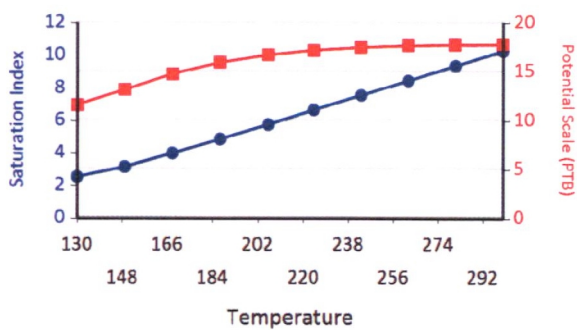
Zinc Carbonate



Mg Silicate



Fe Silicate





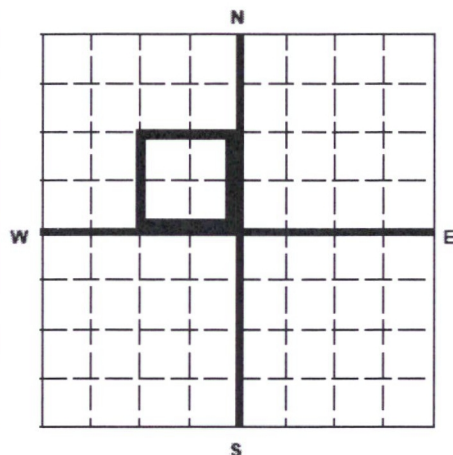
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on
Section Plat - 640 Acres



State
Utah

County
Duchesne

Permit Number
UT2736-04494 **04546**

Surface Location Description

☐ 1/4 of ☐ 1/4 of SE 1/4 of NW 1/4 of Section **16** Township **5S** Range **3W**

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location **1980** ft. from (N/S) **N** Line of quarter section
and **1980** ft. from (E/W) **W** Line of quarter section

U2 Entered

WELL ACTIVITY

- ☐ Brine Disposal
☒ Enhanced Recovery
☐ Hydrocarbon Storage

TYPE OF PERMIT

- ☐ Individual
☒ Area

Number of Wells **111**

Date **31.1.16**

Initial **13**

Lease Name **Ute Indian Tribe**

Well Number **UTE TRIBAL 16-06**

INJECTION PRESSURE

TOTAL VOLUME INJECTED

TUBING - CASING ANNULUS PRESSURE (OPTIONAL MONITORING)

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1885	1922	628		0	0
February	15	1921	1956	748		0	0
March	15	1943	1984	804		0	0
April	15	1949	1985	793		0	0
May	15	1953	1969	865		0	0
June	15	1961	1988	824		0	0
July	15	1950	1960	868		0	0
August	15	1964	1985	813		0	0
September	15	1943	1961	713		0	0
October	15	1968	1979	624		0	0
November	15	1951	1972	645		0	0
December	15	1945	1962	674		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

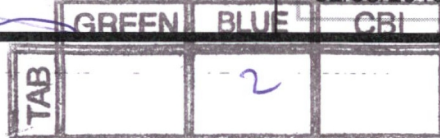
Chad Stevenson, Water Facilities Supervisor

Signature

[Signature]

Date Signed

02/08/2016



Water Analysis Report

Production Company: PETROGLYPH OPERATING CO INC - EBUS

Sales Rep: James Patry

Well Name: UTE TRIBAL 16-06, DUCHESNE

Lab Tech: Michele Pike

Sample Point: Well Head

Sample Date: 1/6/2016

Scaling potential predicted using ScaleSoftPitzer from
Brine Chemistry Consortium (Rice University)

Sample ID: WA-327674

Sample Specifics		Analysis @ Properties in Sample Specifics			
		Cations	mg/L	Anions	mg/L
Test Date:	1/13/2016	Sodium (Na):	2203.18	Chloride (Cl):	3000.00
System Temperature 1 (°F):	60	Potassium (K):	2.86	Sulfate (SO ₄):	490.00
System Pressure 1 (psig):	2000	Magnesium (Mg):	80.21	Bicarbonate (HCO ₃):	976.00
System Temperature 2 (°F):	180	Calcium (Ca):	161.16	Carbonate (CO ₃):	
System Pressure 2 (psig):	50	Strontium (Sr):	4.29	Acetic Acid (CH ₃ COO)	
Calculated Density (g/ml):	1.0022	Barium (Ba):	0.87	Propionic Acid (C ₂ H ₅ COO)	
pH:	7.10	Iron (Fe):	2.99	Butanoic Acid (C ₃ H ₇ COO)	
Calculated TDS (mg/L):	6950.83	Zinc (Zn):	1.48	Isobutyric Acid ((CH ₃) ₂ CHCOO)	
CO ₂ in Gas (%):		Lead (Pb):	0.29	Fluoride (F):	
Dissolved CO ₂ (mg/L):	40.00	Ammonia NH ₃ :		Bromine (Br):	
H ₂ S in Gas (%):		Manganese (Mn):	0.05	Silica (SiO ₂):	27.45
H ₂ S in Water (mg/L):	0.00	Aluminum (Al):	0.13	Calcium Carbonate (CaCO ₃):	
Tot. Suspended Solids (mg/L):		Lithium (Li):	0.72	Phosphates (PO ₄):	4.71
Corrosivity (Langlier Sat. Indx):	0.00	Boron (B):	0.11	Oxygen (O ₂):	
Alkalinity:		Silicon (Si):	12.83		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO ₄ ·2H ₂ O		Celestite SrSO ₄		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	1.03	85.76	0.77	0.43	0.00	0.00	1.43	2.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.86	73.45	0.79	0.43	0.00	0.00	1.24	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.75	65.15	0.82	0.44	0.00	0.00	1.11	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.65	56.88	0.85	0.45	0.00	0.00	0.98	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.55	48.77	0.90	0.45	0.00	0.00	0.85	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.46	40.95	0.97	0.46	0.00	0.00	0.72	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.38	33.54	1.04	0.47	0.00	0.00	0.59	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.30	26.65	1.13	0.48	0.00	0.00	0.46	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.23	20.34	1.24	0.49	0.00	0.00	0.34	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.17	14.68	1.37	0.49	0.00	0.00	0.22	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

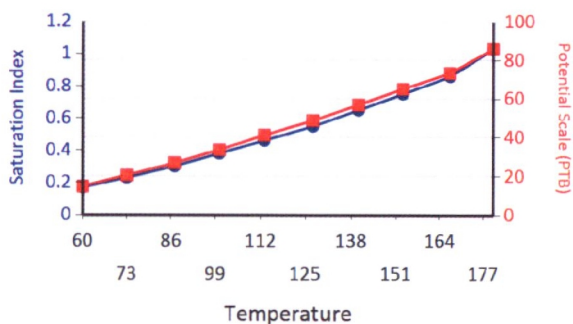
Water Analysis Report

Temp (°F)	PSI	Hemihydrate CaSO ₄ ·0.5H ₂ O		Anhydrate CaSO ₄		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.91	0.00	0.00	1.65	24.56	0.43	6.29	4.53	2.25
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.86	0.00	0.00	0.50	7.16	0.00	0.00	3.54	2.15
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.78	0.00	0.00	0.00	0.00	0.00	0.00	2.88	2.04
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.66	0.00	0.00	0.00	0.00	0.00	0.00	2.24	1.86
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.45	0.00	0.00	0.00	0.00	0.00	0.00	1.60	1.59
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.99	1.17
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.55
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

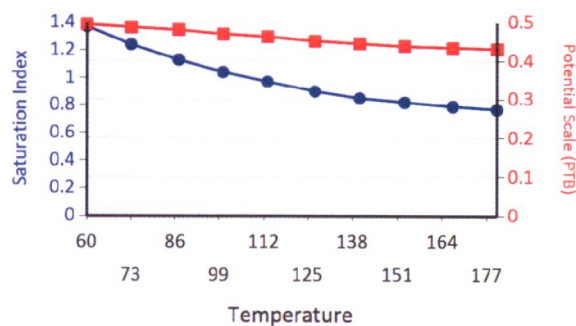
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate

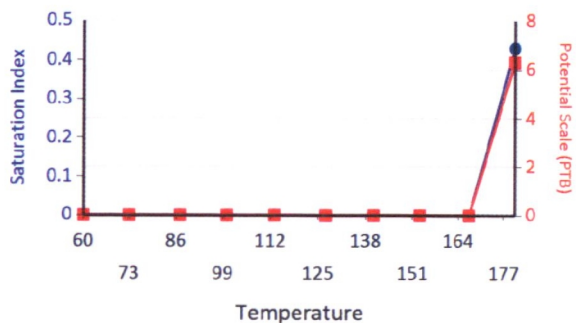
Calcium Carbonate



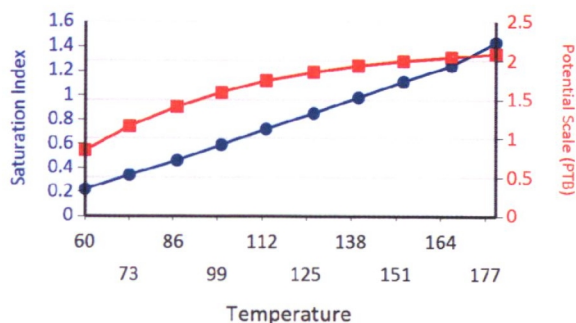
Barium Sulfate



Ca Mg Silicate

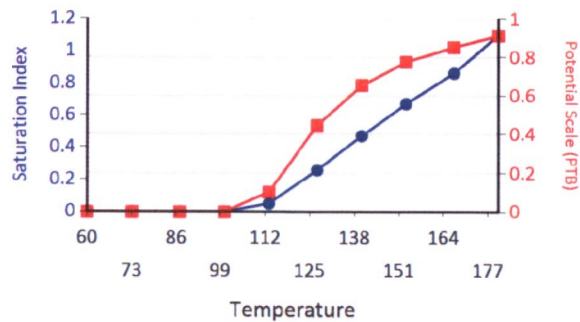


Iron Carbonate

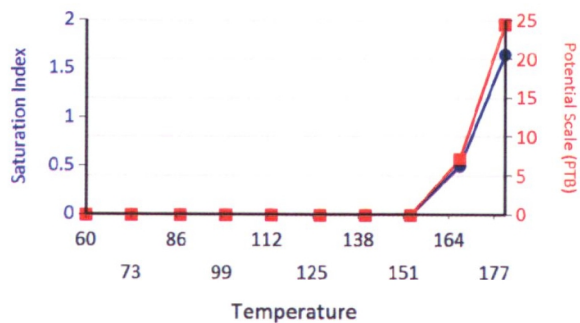


Water Analysis Report

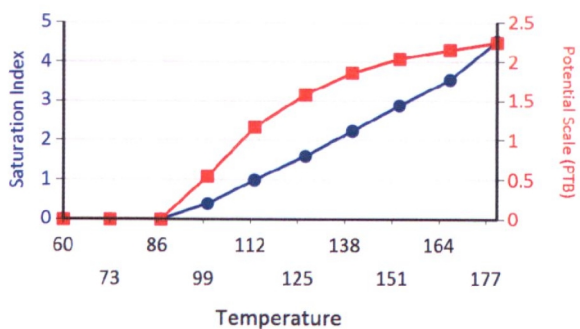
Zinc Carbonate



Mg Silicate



Fe Silicate





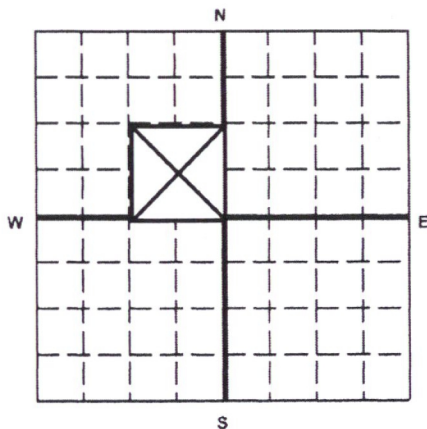
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on
Section Plat - 640 Acres



State
Utah

County
Duchesne

Permit Number
UT2736-04546

Surface Location Description

1/4 of 1/4 of SE 1/4 of NW 1/4 of Section 16 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location 1980 ft. from (N/S) N Line of quarter section
and 1980 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY

- ☐ Brine Disposal
☒ Enhanced Recovery
☐ Hydrocarbon Storage

TYPE OF PERMIT

- ☐ Individual
☒ Area

Number of Wells 111

Lease Name Ute Indian Tribe

Well Number UTE TRIBAL 16-06

INJECTION PRESSURE

TOTAL VOLUME INJECTED

TUBING -- CASING ANNULUS PRESSURE
(OPTIONAL MONITORING)

MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1943	1976	622		0	0
February	14	1976	1986	629		0	0
March	14	1964	1968	703		0	0
April	14	1972	1994	864		0	0
May	14	1963	1964	933		0	0
June	14	1947	1996	712		0	0
July	14	1924	1986	688		0	0
August	14	1909	1937	704		0	0
September	14	1918	1967	693		0	0
October	14	1933	1939	831		0	0
November	14	1950	1977	567		0	0
December	14	1964	1989	808		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Chad Stevenson, Water Facilities Supervisor

Signature

Date Signed

2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/10/15
Initial GW

	GREEN	BLUE	CBI
TAB		2	

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
 Well Name: **PETROGLYPH UTR TRIB 16-06, DUCHESNE**
 Sample Point: **WELLHEAD**
 Sample Date: **1/7/2015**
 Sample ID: **WA-298189**

Sales Rep: **James Patry**
 Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from
 Brine Chemistry Consortium (Rice University)

Sample Specifics		Analysis @ Properties in Sample Specifics			
Test Date:	1/21/2015	Cations	mg/L	Anions	mg/L
System Temperature 1 (°F):	160	Sodium (Na):	142.94	Chloride (Cl):	1000.00
System Pressure 1 (psig):	1300	Potassium (K):	1.65	Sulfate (SO4):	361.00
System Temperature 2 (°F):	80	Magnesium (Mg):	68.81	Bicarbonate (HCO3):	854.00
System Pressure 2 (psig):	15	Calcium (Ca):	136.66	Carbonate (CO3):	
Calculated Density (g/ml):	0.9988	Strontium (Sr):	4.26	Acetic Acid (CH3COO)	
pH:	7.10	Barium (Ba):	0.21	Propionic Acid (C2H5COO)	
Calculated TDS (mg/L):	2599.33	Iron (Fe):	2.15	Butanoic Acid (C3H7COO)	
CO2 in Gas (%):		Zinc (Zn):	0.15	Isobutyric Acid ((CH3)2CHCOO)	
Dissolved CO2 (mg/L):	40.00	Lead (Pb):	0.05	Fluoride (F):	
H2S in Gas (%):		Ammonia NH3:		Bromine (Br):	
H2S in Water (mg/L):	5.00	Manganese (Mn):	0.06	Silica (SiO2):	27.39

Notes:

B=.78 Al=0 Li=.23

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4-2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.57	45.88	0.95	0.11	1.91	1.17	0.62	1.18	0.00	0.00	0.00	0.00	0.00	0.00	8.97	0.08
88.00	157.00	0.52	41.49	0.86	0.11	1.77	1.16	0.59	1.16	0.00	0.00	0.00	0.00	0.00	0.00	8.72	0.08
97.00	300.00	0.55	44.08	0.79	0.11	1.74	1.16	0.66	1.21	0.00	0.00	0.00	0.00	0.00	0.00	8.60	0.08
106.00	443.00	0.59	46.84	0.72	0.10	1.73	1.16	0.73	1.26	0.00	0.00	0.00	0.00	0.00	0.00	8.48	0.08
115.00	585.00	0.63	49.74	0.65	0.10	1.72	1.16	0.79	1.30	0.00	0.00	0.00	0.00	0.00	0.00	8.37	0.08
124.00	728.00	0.67	52.77	0.60	0.09	1.72	1.16	0.86	1.34	0.00	0.00	0.00	0.00	0.00	0.00	8.27	0.08
133.00	871.00	0.72	55.90	0.55	0.09	1.72	1.16	0.92	1.37	0.00	0.00	0.00	0.00	0.00	0.00	8.18	0.08
142.00	1014.00	0.76	59.11	0.50	0.08	1.73	1.16	0.99	1.40	0.00	0.00	0.00	0.00	0.00	0.00	8.09	0.08
151.00	1157.00	0.81	62.39	0.46	0.08	1.75	1.16	1.06	1.42	0.00	0.00	0.00	0.00	0.00	0.00	8.02	0.08
160.00	1300.00	0.86	65.70	0.43	0.08	1.78	1.16	1.12	1.44	0.00	0.00	0.00	0.00	0.00	0.00	7.95	0.08

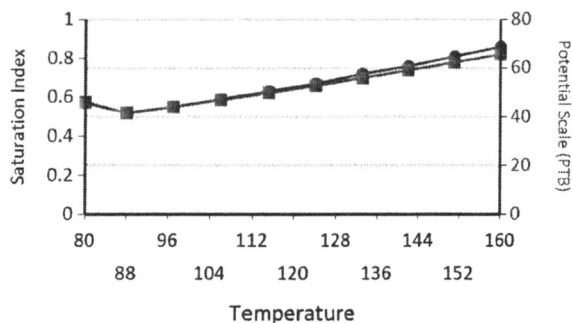
		Hemihydrate CaSO4-0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.77	0.02	0.00	0.00	0.00	0.00	0.00	0.00
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.41	0.02	0.00	0.00	0.00	0.00	0.00	0.00
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.17	0.02	0.00	0.00	0.00	0.00	0.00	0.00
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.96	0.02	0.00	0.00	0.00	0.00	0.22	0.24
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.75	0.02	0.00	0.00	0.00	0.00	0.58	0.56
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.56	0.02	0.00	0.00	0.00	0.00	0.95	0.82
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.38	0.02	0.00	0.00	0.00	0.00	1.33	1.03
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.21	0.02	0.00	0.00	0.00	0.00	1.72	1.19
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.06	0.02	0.00	0.00	0.00	0.00	2.12	1.31
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.91	0.02	0.00	0.00	0.00	0.00	2.52	1.41

Water Analysis Report

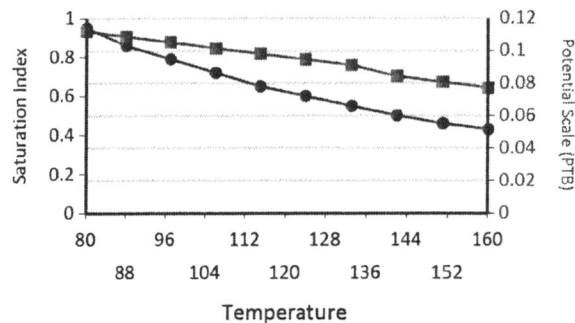
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide Fe Silicate

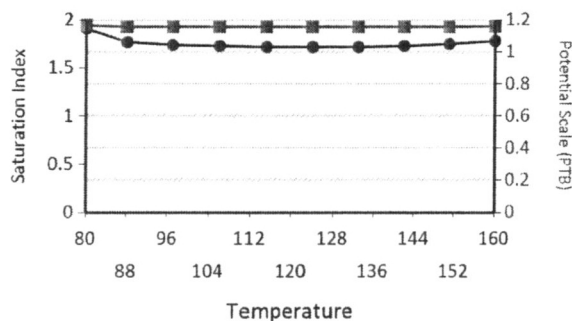
Calcium Carbonate



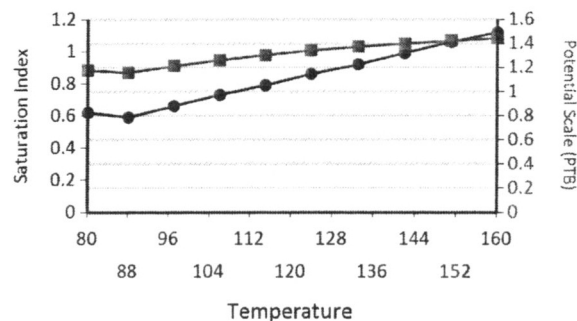
Barium Sulfate



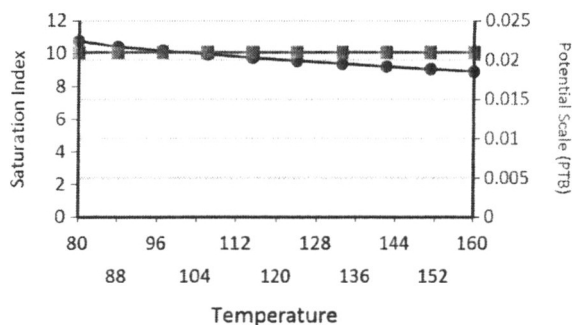
Iron Sulfide



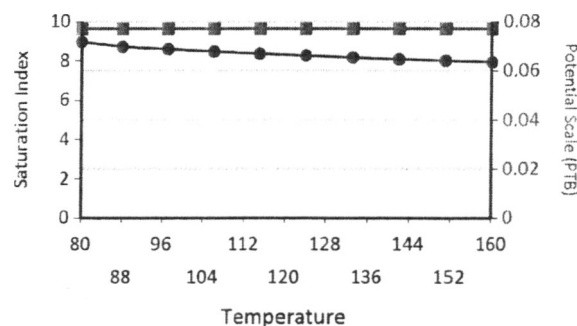
Iron Carbonate



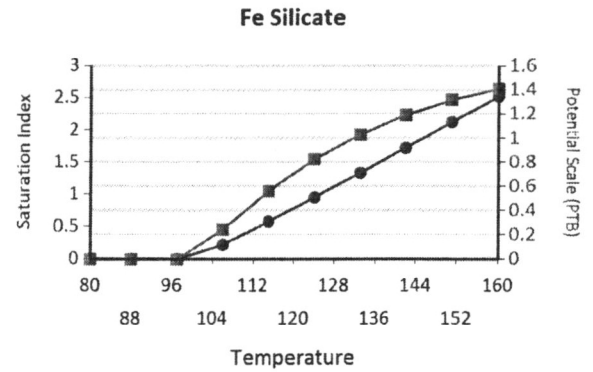
Lead Sulfide



Zinc Sulfide



Water Analysis Report

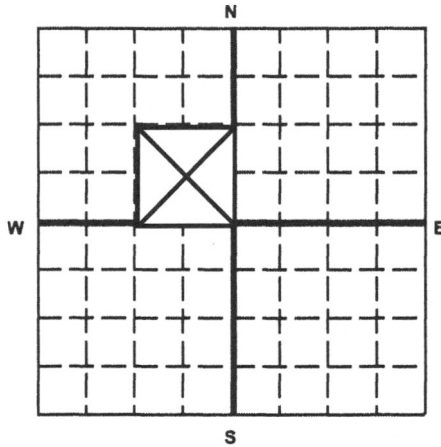



 United States Environmental Protection Agency
 Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

 Name and Address of Existing Permittee
 Petroglyph Operating Company, Inc. 2258
 P.O. Box 7608
 Boise, Idaho 83709

 Name and Address of Surface Owner
 Ute Indian Tribe
 P.O. Box 70
 Ft. Duchesne, Utah 84026

 Locate Well and Outline Unit on
 Section Plat - 640 Acres

 State
 Utah

 County
 Duchesne

 Permit Number
 UT2736-04546

Surface Location Description

1/4 of 1/4 of SE 1/4 of NW 1/4 of Section 16 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

 Location 1980 ft. from (N/S) N Line of quarter section
 and 1980 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY

- ☐ Brine Disposal
☒ Enhanced Recovery
☐ Hydrocarbon Storage

TYPE OF PERMIT

- ☐ Individual
☒ Area

Number of Wells 111

Lease Name Ute Indian Tribe

Well Number UTE TRIBAL 16-06

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1927	1989	50		0	0
February	13	1957	1988	476		0	0
March	13	1945	1955	382		0	0
April	13	1957	1972	420		0	0
May	13	1964	1987	358		0	0
June	13	1975	1973	318		0	0
July	13	1950	1965	318		0	0
August	13	1967	1993	396		0	0
September	13	1973	2011	386		0	0
October	13	1957	1970	488		0	0
November	13	1950	1988	547		0	0
December	13	1944	1964	538		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

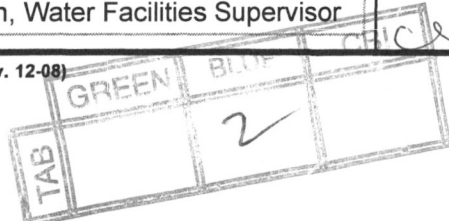
Name and Official Title (Please type or print)

Chad Stevenson, Water Facilities Supervisor

Signature

Date Signed

2/11/2014



U2 Entered

Date 3/18/14

Initial JS

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**Well Name: **UTE TRIBAL 16-06 INJ**Sample Point: **Wellhead**Sample Date: **1/8/2014**Sample ID: **WA-263374**Sales Rep: **James Patry**Lab Tech: **Gary Winegar**Scaling potential predicted using ScaleSoftPitzer from
Brine Chemistry Consortium (Rice University)

Sample Specifics		Analysis @ Properties in Sample Specifics			
Test Date:	1/15/2014	Cations	mg/L	Anions	mg/L
System Temperature 1 (°F):	180	Sodium (Na):	143.00	Chloride (Cl):	4000.00
System Pressure 1 (psig):	1300	Potassium (K):	5.00	Sulfate (SO ₄):	339.00
System Temperature 2 (°F):	60	Magnesium (Mg):	73.00	Bicarbonate (HCO ₃):	561.20
System Pressure 2 (psig):	15	Calcium (Ca):	168.00	Carbonate (CO ₃):	
Calculated Density (g/ml):	1.000	Strontium (Sr):	4.00	Acetic Acid (CH ₃ COO)	
pH:	7.70	Barium (Ba):	0.36	Propionic Acid (C ₂ H ₅ COO)	
Calculated TDS (mg/L):	5319.36	Iron (Fe):	2.20	Butanoic Acid (C ₃ H ₇ COO)	
CO ₂ in Gas (%):		Zinc (Zn):	0.01	Isobutyric Acid ((CH ₃) ₂ CHCOO)	
Dissolved CO ₂ (mg/L):	0.00	Lead (Pb):	0.00	Fluoride (F):	
H ₂ S in Gas (%):		Ammonia NH ₃ :		Bromine (Br):	
H ₂ S in Water (mg/L):	0.00	Manganese (Mn):	0.05	Silica (SiO ₂):	23.54

Notes:

B=.6 Al=.1 Li=.05

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO ₄ ·2H ₂ O		Celestite SrSO ₄		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.95	37.59	1.19	0.20	0.00	0.00	0.77	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.93	36.48	1.04	0.20	0.00	0.00	0.81	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.98	39.03	0.91	0.19	0.00	0.00	0.91	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.03	41.96	0.80	0.18	0.00	0.00	1.01	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.08	45.25	0.70	0.17	0.00	0.00	1.10	1.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.15	48.87	0.62	0.16	0.00	0.00	1.20	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.21	52.78	0.55	0.15	0.00	0.00	1.29	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.29	56.95	0.49	0.15	0.00	0.00	1.39	1.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.36	61.33	0.45	0.14	0.00	0.00	1.48	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.44	65.89	0.41	0.13	0.00	0.00	1.57	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

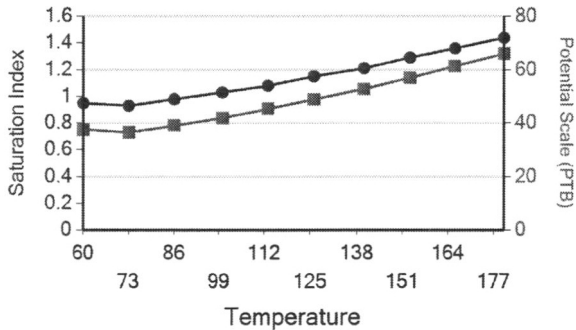
Water Analysis Report

Temp (°F)	PSI	Hemihydrate CaSO ₄ •0.5H ₂ O		Anhydrate CaSO ₄		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.34	1.32
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	1.34
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83	1.44
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	1.52
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	2.06	0.00	0.00	3.80	1.58
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	5.10	0.21	0.85	4.32	1.62
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	8.63	0.65	2.60	4.86	1.65
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	12.55	1.08	4.51	5.41	1.67
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	16.67	1.52	6.49	5.97	1.69
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.30	20.59	1.96	8.43	6.53	1.70

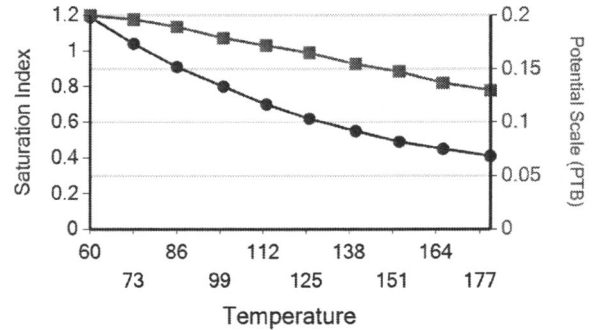
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

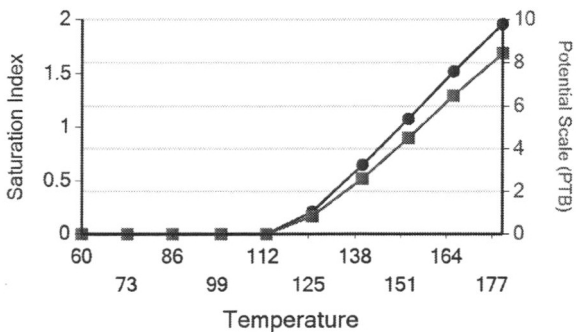
Calcium Carbonate



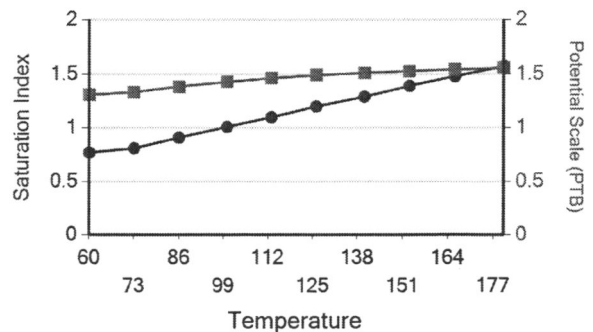
Barium Sulfate



Ca Mg Silicate

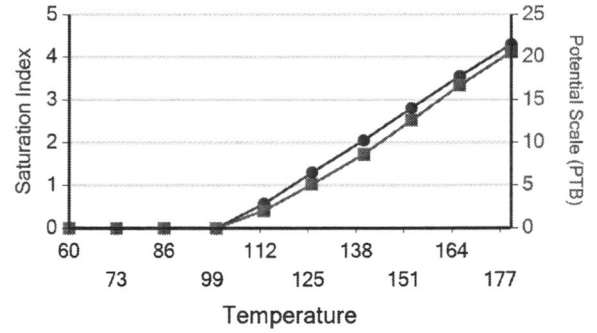


Iron Carbonate

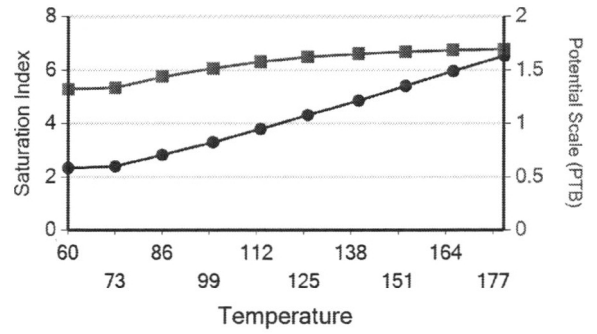


Water Analysis Report

Mg Silicate



Fe Silicate



RECEIVED

MAY 12 2014

Office of Enforcement, Compliance
and Environmental Justice (UFO)

May 2, 2014

Don Breffle
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

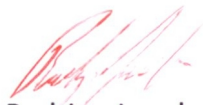
RE: EPA AREA PERMIT NO. **UT2736-04546**
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 16-06

Mr. Breffle:

The enclose Mechanical Integrity Test was performed on the above referenced well on April 28, 2014. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.



Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 16-06

U2 Entered
Date 5/12/14
Initial JB

	GREEN	BLUE	CB!
TAB		2	

Mechanical Integrity Test Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 4, 28, 14
Test conducted by: CHAD STEVENSON
Others present: _____

Well Name: <u>16-06</u>	Type: ER SWD	Status: AC TA UC
Field: <u>ANTELOPE CREEK</u>		
Location: <u>16-06</u> Sec: _____ T _____ N / S R _____ E / W County: <u>DUCHESSNE</u> State: <u>UT</u>		
Operator: <u>PETROGLYPH ENERGY</u>		
Last MIT: <u>1</u> / <u>1</u>		Maximum Allowable Pressure: _____ PSIG

Regularly scheduled test? ☒ Yes ☐ No
Initial test for permit? ☐ Yes ☐ No
Test after well rework? ☐ Yes ☐ No

Well injecting during test? If Yes, rate: 25 bpd
Pre-test annulus pressure: _____ psig

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING	PRESSURE RECORD		
Initial Pressure	<u>1950</u> psig	psig	psig
End of test pressure	<u>1950</u> psig	psig	psig
CASING / TUBING ANNULUS	PRESSURE RECORD		
0 minutes	<u>1125</u> psig	psig	psig
5 minutes	<u>1125</u> psig	psig	psig
10 minutes	<u>1125</u> psig	psig	psig
15 minutes	<u>1125</u> psig	psig	psig
20 minutes	<u>1125</u> psig	psig	psig
25 minutes	<u>1125</u> psig	psig	psig
30 minutes	<u>1125</u> psig	psig	psig
<u>4 Hours</u> minutes	<u>1125</u> psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

Does the annulus pressure build back up after the test? If Yes, _____ psig.

PRINTED IN U.S.A.

NY 8

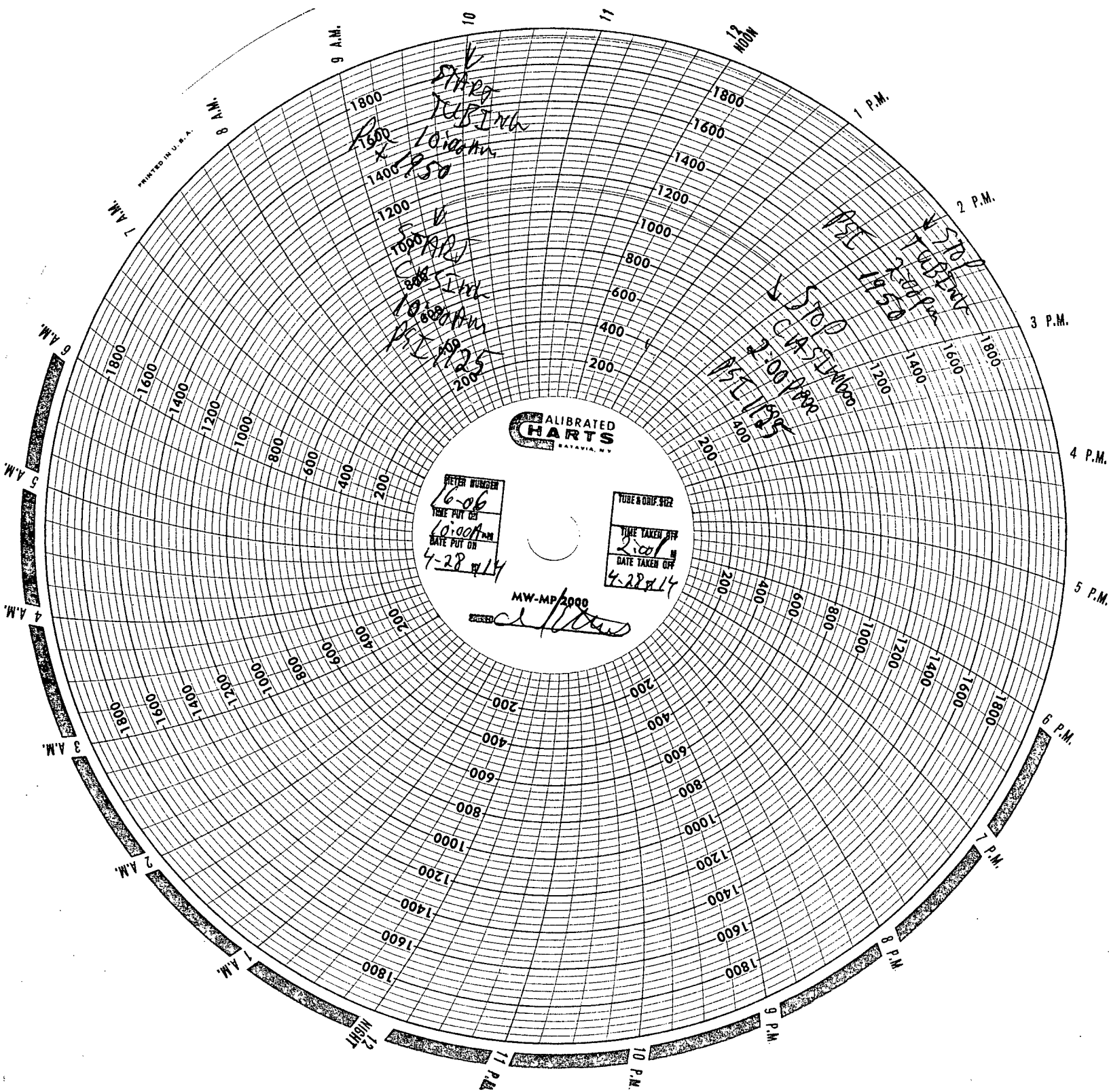
CALIBRATED
CHARTS
BATAVIA, N.Y.

PIETER NUMBER
16-06
TIME PUT ON
10:00 AM
DATE PUT ON
4-28-14

TUBE NO. ORIF. SIZE
TIME TAKEN OFF
2:00 PM
DATE TAKEN OFF
4-28-14

MW-MP 2000

CHARTERED





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

AUG 20 2007

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: UNDERGROUND INJECTION CONTROL (UIC) PROGRAM
Minor Permit Modification No. 1
Increase Injection Pressure No.1
UIC Area Permit No. UT20736-00000
EPA Well ID No. UT20736-04546
Ute Tribal 16-06
Antelope Creek Field, Duchesne County, Utah

Dear Mr. Wall:

The Region 8 Ground Water Program office of the Environmental Protection Agency (EPA) received from Petroglyph Energy, Inc the results of a May 8, 2007 Step-Rate Test (SRT) conducted on the Ute Tribal 16-06 injection well, as required by the initial permit requirements. This test is required by the EPA to increase the maximum allowed injection pressure (MAIP).

Our SRT Analysis identified the fracture gradient (FG) of the authorized injection interval to be **0.886 psi/ft**. Therefore, the maximum authorized injection pressure is **2030 psig**, not 1820 psig as stated in the Authorization to Continue Injection letter, dated August 30, 2001.

This increase of MAIP for the Ute Tribal 16-06 injection well is being made under the authority of 40 CFR §144.41 (e) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. In the future, should you choose to request a modification to the approved MAIP, new supporting data such as a new SRT will be required. In order to inject at pressures greater than the permitted MAIP during any future test(s), you must receive prior authorization from the Director.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

AUG 20 2007

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUEST

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

Scan under
UT 20736 - 04546
66 "Modification -
Minor Mod Approved
8/20/2007

(UIC) PROGRAM

000

Antelope Creek Field, Duchesne County, Utah

Dear Mr. Wall:

The Region 8 Ground Water Program office of the Environmental Protection Agency (EPA) received from Petroglyph Energy, Inc the results of a May 8, 2007 Step-Rate Test (SRT) conducted on the Ute Tribal 16-06 injection well, as required by the initial permit requirements. This test is required by the EPA to increase the maximum allowed injection pressure (MAIP).

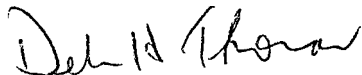
Our SRT Analysis identified the fracture gradient (FG) of the authorized injection interval to be **0.886 psi/ft**. Therefore, the maximum authorized injection pressure is **2030 psig**, not 1820 psig as stated in the Authorization to Continue Injection letter, dated August 30, 2001.

This increase of MAIP for the Ute Tribal 16-06 injection well is being made under the authority of 40 CFR §144.41 (e) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. In the future, should you choose to request a modification to the approved MAIP, new supporting data such as a new SRT will be required. In order to inject at pressures greater than the permitted MAIP during any future test(s), you must receive prior authorization from the Director.

Please be reminded that it is your responsibility to be aware of and to comply with all conditions of your Permit. If you have any questions regarding this approval, please call Linda Bowling at 800-227-8917 (ext 312-6254).

For questions regarding notification, testing, monitoring, reporting, or other Permit requirements, please call Nathan Wiser at 800-227-8917 (ext 312-6211).

Sincerely,

A handwritten signature in cursive script, appearing to read "Stephen S. Tuber".

for Stephen S. Tuber
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

cc:

Curtis Cesspooch, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Irene Cuch, Vice-Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Steven Cesspooch, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Phillip Chimbraus, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Francis Poowegup, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Chester Mills, Superintendent
BIA.- Uintah & Ouray Indian Agency

Kenneth Smith
Executive Vice President and Chief
Operating Officer
Petroglyph Energy, Inc.

Shawn Chapoose, Director
Land Use Department
Ute Indian Tribe

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining

Fluid Minerals Engineering Office
BLM - Vernal Office

Lynn Becker, Director
Energy and Minerals Department
Ute Indian Tribe



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
<http://www.epa.gov/region08>

AUG 30 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: Authorization to Continue Injection
Ute Tribal #16-06
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04546
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the June 29, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #16-06 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 1900 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning January 29, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1820 psi**. Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #16-06 under the terms and conditions of EPA Area Permit UT2736-00000 and the





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE:
DENVER, CO 80202-246
<http://www.epa.gov/region>

AUG 30 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: Authorization to Continue Injection
Ute Tribal #16-06
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04546
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the June 29, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #16-06 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 1900 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning January 29, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1820 psi**. Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #16-06 under the terms and conditions of EPA Area Permit UT2736-00000 and the

*Scan under
UT20736-04546
220 "Authorization to
Inject - Final" 8/30/2001*

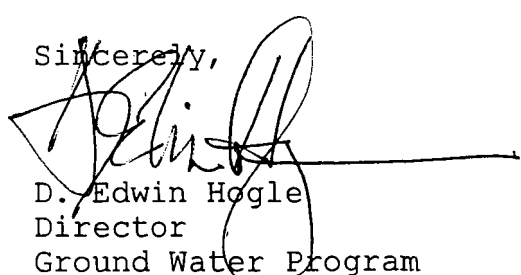


Authorization for Additional Well UT2736-04546 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well was 1900 psig per UIC Add Additional Well to Area Permit, dated September 12, 2000.

Please note that the maximum pressure (1820 psi) used during a RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test that measure the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External) MI demonstration must be run. Please note that to use a pressure greater than the **present MAIP of 1820 psig** during a step rate test and RATS, you must first receive prior written authorization from the Director.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,



D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
 State of Utah Natural Resources
 Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
 Bureau of Land management
 Vernal District Office

Mr. Nathan Wiser, 8ENF-T
 USEPA

U.S. Postal Service	
CERTIFIED MAIL RECEIPT	
(Domestic Mail Only, No Insurance Coverage Provided)	
<div style="display: flex; justify-content: space-between;"> <div> Postage \$ Certified Fee Return Receipt Fee <small>(Endorsement Required)</small> Restricted Delivery Fee <small>(Endorsement Required)</small> Total Postage & Fees \$ </div> <div> Postmark Here AUG 30 2001 </div> </div>	
Sent To Mr. Micheal Safford Operations Coordinator Petroglyph Operating Co., Inc. P.O. BOX 607 Roosevelt, UT 84066	
Street, Apt., or PO Box No. City, State, ZIP+4	
PS Form 3800, January 2001 See Reverse for Instructions	

EEPT 28EB 5000 02ED 1002

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: **8/30/01 CW 4156C - 4157C**
Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

AUG 30 2001

2. Article Number (Copy from service label)

7001 0320 0005 9387 1833

PS Form 3811, July 1999

Domestic Return Receipt

102595-00-M-0952

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery

C. Signature

X

D. Is delivery address different from item 1?

If YES, enter delivery address below:

☐ Agent
☐ Addressee

☐ Yes
☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

8/30/01 TO MICHEAL SAFFORD
 PETROGLYPH OPERATING COMPANY, INC.
 Certified mailed together 4156C, 4157C & 4158C
 Original green card:
 1. UTE TRIBAL #04-13 (UT2736-04636) (#4156C)
 2. UTE TRIBAL #07-14 (UT2736-04495) (#4157C) ✓
 * 3. UTE TRIBAL #16-06 (UT2736-04546)

U.S. Postal Service

CERTIFIED MAIL RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

EEPT 2866 5000 0200 1002

Certified Fee

Return Receipt Fee
(Endorsement Required)Restricted Delivery Fee
(Endorsement Required)

Total Postage & Fees \$

Mr. Micheal Safford

Sent To

Operations Coordinator

Street, Apt.

Petroglyph Operating Co., Inc.

or PO Box No.

P.O. BOX 607

City, State, ZIP+4

Roosevelt, UT 84066

PS Form 3800, January 2001

See Reverse for Instructions

AUG 30 2001



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
<http://www.epa.gov/region08>

AUG 30 2001

CONCURRENCE COPY

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #16-06
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04546
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the June 29, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #16-06 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 1900 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning January 29, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1820 psi**. Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #16-06 under the terms and conditions of EPA Area Permit UT2736-00000 and the

8P-W-GW
Dym
8/23/01

8P-W-GW
8/29/01 & C
mailed
8/30/01 & C

[Handwritten signature]
8/29/01



Printed on Recycled Paper

Authorization for Additional Well UT2736-04546 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well was 1900 psig per UIC Add Additional Well to Area Permit, dated September 12, 2000.

Please note that the maximum pressure **(1820 psi)** used during a RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test that measure the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External) MI demonstration must be run. Please note that to use a pressure greater than the **present MAIP of 1820 psig** during a step rate test and RATS, you must first receive prior written authorization from the Director.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, 8ENF-T
USEPA

CONCURRENCE COPY



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: UNDERGROUND INJECTION CONTROL (UIC) PROGRAM
Minor Permit Modification No. 1
Increase Injection Pressure No.1
UIC Area Permit No. UT20736-00000
EPA Well ID No. UT20736-04546
Ute Tribal 16-06
Antelope Creek Field, Duchesne County, Utah

Dear Mr. Wall:

The Region 8 Ground Water Program office of the Environmental Protection Agency (EPA) received from Petroglyph Energy, Inc the results of a May 8, 2007 Step-Rate Test (SRT) conducted on the Ute Tribal 16-06 injection well, as required by the initial permit requirements. This test is required by the EPA to increase the maximum allowed injection pressure (MAIP).

Our SRT Analysis identified the fracture gradient (FG) of the authorized injection interval to be **0.886 psi/ft**. Therefore, the maximum authorized injection pressure is **2030 psig**, not 1820 psig as stated in the Authorization to Continue Injection letter, dated August 30, 2001.

This increase of MAIP for the Ute Tribal 16-06 injection well is being made under the authority of 40 CFR §144.41 (e) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. In the future, should you choose to request a modification to the approved MAIP, new supporting data such as a new SRT will be required. In order to inject at pressures greater than the permitted MAIP during any future test(s), you must receive prior authorization from the Director.

LMW
8/14/07

Op. n. GW
8/15/07
for S.P.

Please be reminded that it is your responsibility to be aware of and to comply with all conditions of your Permit. If you have any questions regarding this approval, please call Linda Bowling at 800-227-8917 (ext 312-6254).

For questions regarding notification, testing, monitoring, reporting, or other Permit requirements, please call Nathan Wiser at 800-227-8917 (ext 312-6211).

Sincerely,

Stephen S. Tuber
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

cc:

Curtis Cesspooch, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Irene Cuch, Vice-Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Steven Cesspooch, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Phillip Chimbraus, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Francis Poowegup, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency

Kenneth Smith
Executive Vice President and Chief
Operating Officer
Petroglyph Energy, Inc.

Shawn Chapoose, Director
Land Use Department
Ute Indian Tribe

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining

Fluid Minerals Engineering Office
BLM - Vernal Office

Lynn Becker, Director
Energy and Minerals Department
Ute Indian Tribe

bcc w/o enclosures:

Monica Morales, 8TAP
Nathan Wiser, ENF-UFO



Printed on Recycled Paper